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TITLE

T5/T8 COLD CATHODE MODULAR ASSEMBLY W/EMERGENCY BATTERY
BACKUP

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FIELD OF THE INVENTION

The present invention relates to lighting.

BACKGROUND OF THE INVENTION

The prior art includes various lighting technology including the cold cathode fluorescent lamps disclosed in US Patent No. 6,135,620, to March, of which is incorporated herein by reference, and the illuminated sign disclosed in US Patent No. 6,240,665 to Brown et al, which is also incorporated herein by reference.

DRAWINGS

See the accompanying three sheets of drawings setting out 6 different figures.

DESCRIPTION OF THE INVENTION

Operation of the invention.

COLD CATHODE T5/T8 LAMP MODULE W/EMERGENCY BATTERY BACKUP

EDGE LIT VERSION.

The T5/T8 lamp module is a fully integrated, self-contained light source, consisting of two 3mm cold cathode lamps encased in a standard T5/T8 Bi-pin fluorescent tube, two standard T5/T8 lampholders, an injection molded housing and vacuum metalized reflector, an encased electronic ballast/inverter, and the solid state battery charging board, which plugs into the ballast/inverter with a quick-connect terminal. An output line with a quick-connect terminal connects to either the line voltage or another lamp module.

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Operation: The T5/T8 Lamp Module is designed to operate at either 120 Volts or 277 Volts during normal (AC) operation, and 6 Volts during emergency (DC) operation, during which it is powered by a 6 Volt Nickel Cadmium battery. The Cold Cathode lamps will operate for up to 88,000 hours and consume less than 7 Watts of power during normal operation. The units can be connected directly to the line voltage, or they can be ganged (daisy-chained) together to illuminate larger areas. The vacuum metalized reflectors are designed to maximize the amount of light that is directed into the edge of the panel to be illuminated. When AC power fails, the battery will power the inverter and keep the cold cathode lamps illuminated for up to two hours. When AC power returns, the relay switches the ballast/inverter to AC mode (line voltage), and recharges the battery back to its optimum operating specifications.

Advantages of the invention over the prior art.

Advantages to the T5/T8 Cold Cathode Lamp Module: This unit is designed to be completely modular, as the T5/T8 Cold Cathode tube, the lampholders, the battery and charging circuit can be replaced if necessary without compromising the operation of the lamp module. The module can operate independently of the battery and charging circuit when the terminal is shunted, acting as an AC only module.

Since the cold cathode tubes are mounted in a standard T5/T8 bi-pin fluorescent tube, they can be mounted in a wide variety of configurations besides the integrated module. The lamp tubes can be made in any length from 6" to 48," and mounted in any fixture that normally uses T5/T8 lamps and lampholders. The cold cathode tubes can also be mounted in other sizes and shapes, from T8 fluorescent-type to circline type to spiral-type. When connected to the ballast/inverter module, they offer the same advantages of long life efficient lumens per watt ratio, low wattage (low energy consumption), low maintenance, and emergency battery backup.

Commercially viable application of the invention.

Applications: The T5/T8 cold cathode lamp module is ideal for all types of emergency egress lighting, exit and informational signage, high-abuse and vandal-resistant lighting, prison lighting, cove lighting, step & aisle lighting, and all lighting applications where long lamp life and very low maintenance, emergency battery backup, and low energy consumption are critical.